

In the Claims

This listing of claims will replace all prior versions and listings of claims in this application.

1 (Currently amended). A method of performing an electrochemical reaction in which hydrogen and oxygen are converted into water, in an electrochemical cell comprising electrodes separated by a hydrophilic ~~ion-exchange~~ membrane which is ionically inactive or weakly ionically active, wherein the reaction is conducted in the presence of an aqueous solution of an electrolyte of which the concentration is controlled by removing water from the membrane.

2-5 (Canceled).

6 (Previously presented). The method according to claim 1, wherein the electrolyte is toluenesulphonic acid, vinylsulphonic acid, acrylamido-(2-methyl)propanesulphonic acid, sodium hydroxide or potassium hydroxide.

7-8 (Canceled).

9 (Previously presented). The method according to claim 1, wherein the hydrophilic material is a polymeric material.

10 (Previously presented). The method according to claim 9, wherein the hydrophilic material is obtainable by the polymerisation of monomers including methyl methacrylate, N-vinyl-2-pyrrolidone or acrylonitrile.

11 (Previously presented). The method according to claim 9, wherein the hydrophilic material is cross-linked.

12 (Canceled).

13 (Previously presented). The method according to claim 1, wherein the cell is in the form of a membrane-electrode assembly (MEA), or a stack of MEAs.

14 (Previously presented). The method according to claim 1, wherein the concentration is controlled by the addition of further electrolyte.

15 (New). A method of performing an electrochemical reaction in which water is converted into hydrogen and oxygen, in an electrochemical cell comprising electrodes separated by a hydrophilic membrane which is ionically inactive or weakly ionically active, wherein the reaction is conducted in the presence of an aqueous solution of an electrolyte of which the concentration is controlled by introducing water into the cell.

16 (New). The method according to claim 15, wherein the electrolyte is toluenesulphonic acid, vinylsulphonic acid, acrylamido-(2-methyl)propanesulphonic acid, sodium hydroxide or potassium hydroxide.

17 (New). The method according to claim 15, wherein the hydrophilic material is a polymeric material.

18 (New). The method according to claim 17, wherein the hydrophilic material is obtainable by the polymerisation of monomers including methyl methacrylate, N-vinyl-2-pyrrolidone or acrylonitrile.

19 (New). The method according to claim 17, wherein the hydrophilic material is cross-linked.

20 (New). The method according to claim 15, wherein the cell is in the form of a membrane-electrode assembly (MEA), or a stack of MEAs.

21 (New). The method according to claim 15, wherein the concentration is controlled by the addition of further electrolyte.